

AMENDMENTS TO THE CLAIMS

Claims 1-6. (Canceled)

7. (Currently Amended) An implant adapted to be placed between L5 and S1 vertebrae comprising:

a brace with a first end adapted to contact an inferior surface of a spinous process of the L5 vertebrae, and a second end; and

a base having at least a flange adapted to engage the S1 vertebra and a section to engage the brace;

the brace including a first surface that faces towards the base and a second surface that faces away from the base, a thickness of the brace measured between the first and second surfaces being greater at the first end than the second end;

the brace and base being connected together with the enlarged first end positioned to contact the inferior surface of the spinous process of the L5 vertebra during extension of the spine ~~with a distance measured between contact surfaces of the first end of the brace and the flange defining a minimum distance between lamina of the S1 vertebra and the inferior surface of the spinous process of the L5 vertebra.~~

8. (Canceled)

9. (Currently Amended) An implant adapted to be placed between L5 and S1 vertebrae of the spine, the implant comprising:

a body;

at least one hook extending from the body and adapted to allow the body to engage a S1 vertebra;

a brace extending from the body and including an elongated shape with a major axis and a minor axis, wherein the brace has a distal end on the major axis adapted for contacting an inferior surface of a spinous process of the L5 vertebra during extension of the spine; and

a device that can secure the brace to the body in a position with the distal end located outward from the body to contact the inferior surface of the spinous process of the L5 vertebra during extension of the spine.

10. (Original) The implant of claim 9 wherein:

at least part of the implant is comprised of a material selected from the group consisting of: polyetheretherketone, polyaryletheretherketone, and polyetherketoneketone.

11. (Original) The implant of claim 9 wherein:

at least part of the implant is comprised of a material selected from the group consisting of: polyetherketoneetherketoneketone, polyetheretherketoneketone, polyketone, and polyetherketone.

12. (Original) The implant of claim 9 wherein:

at least part of the implant is comprised of titanium.

13. (Previously Presented) The implant of claim 9 wherein the device can secure the brace to the body in a plurality of positions.

14. (Previously Presented) The implant of claim 9 wherein the distal end is bulbous.

15. (Previously Presented) The implant of claim 9 wherein the distal end is one of elliptical, ovoid, oval, and round.

16. (Previously Presented) The implant of claim 9 wherein the distal end provides a surface which is at an angle to a beam of the brace, which surface is adapted to engage the L5 vertebra.

Claims 17-19. (Canceled)

20. (Previously Presented) The implant of claim 9 wherein the distal end includes a convex surface that is adapted to engage a spinous process of the L5 vertebra to spread the load between the distal end and the spinous process.

21. (Previously Presented) The implant of claim 9 wherein the brace includes an elongated aperture and the device extends through the aperture and can be secured to the aperture in a plurality of positions in order to position the brace relative to the body in a plurality of positions.

22. (Previously Presented) The implant of claim 9 wherein the body includes a first portion and a second portion with a beam platform located between the first and second portions and the beam platform spaced from the first and second portions in order to space the brace from the first and second portions.

23. (Original) The implant of claim 22 wherein the hook extends from the first portion and another hook extends from the second portion.

24. (Original) The implant of claim 22 wherein the device extends from the platform.

25. (Canceled)

26. (Previously Presented) An implant adapted to be placed between vertebrae comprising:

a body;

at least one hook extending from the body and including a first contact surface that faces in an inferior direction to allow the body to engage a first vertebra;

a brace extending from the body and including a distal end with a second contact surface that faces in a superior direction and an elongated section extending outward from the distal end that is secured to the body, the distal end including a greater thickness than the elongated section; and

a device that secures the elongated section to the body and positions the second contact surface to contact an inferior surface of a spinous process of a second vertebra positioned superior of the first vertebra during extension of the vertebrae.

27. (Previously Presented) The implant of claim 26 wherein:

at least part of the implant is comprised of a material selected from the group consisting of: polyetheretherketone, polyaryletheretherketone, and polyetherketoneketone.

28. (Previously Presented) The implant of claim 26 wherein:

at least part of the implant is comprised of a material selected from the group consisting of polyetherketoneetherketoneketone, ployetheretherketoneketone, polyketone, and polyetherketone.

29. (Original) The implant of claim 26 wherein: at least part of the implant is comprised of titanium.

30. (Previously Presented) The implant of claim 26 wherein the device secures the brace to the body in a plurality of positions.

31. (Previously Presented) The implant of claim 26 wherein the distal end is bulbous.

32. (Previously Presented) The implant of claim 26 wherein where the distal end is one of elliptical, ovoid, oval, and round.

33. (Previously Presented) The implant of claim 26 wherein the distal end provides a surface which is at an angle to the elongated section, which surface is adapted to engage a L5 vertebra.

34. (Previously Presented) The implant of claim 26 wherein the distal end provides a surface that is adapted to spread a contact load between a L5 vertebra and the distal end.

35. (Previously Presented) The implant of claim 26 wherein the distal end is adapted to engage a spinous process of a L5 vertebra.

36. (Previously Presented) The implant of claim 26 wherein the distal end is adapted to engage a spinous process of a L5 vertebra over a conforming contact area.

37. (Previously Presented) The implant of claim 26 wherein the distal end includes a convex surface that is adapted to engage a spinous process of a L5 vertebra in order to spread the load between the distal end and the spinous process of the L5 vertebra.

38. (Previously Presented) The implant of claim 26 wherein the brace includes an elongated aperture and the device extends through the aperture and can be secured to the aperture in a plurality of positions in order to position the brace relative to the body in a plurality of positions.

39. (Previously Presented) The implant of claim 26 wherein the body includes a first portion and second portion with a beam platform located between the first and second positions and the beam platform spaced from the first and second positions in order to space the brace from the first and second portions.

40. (Original) The implant of claim 39 wherein the hook extends from the first portion and another hook extends from the second portion.

41. (Original) The implant of claim 39 wherein the device extends from the platform.

42. (Original) The implant of claim 26 including a device that secures the base to an S1 vertebra.

43. (Previously Presented) An implant adapted to be placed between L5 and S1 vertebrae comprising:

a body having first and second portions with a platform located between the first and second portions, the platform attached to a posterior surface of the first and second portions, the body including a superior-most edge;

a notch formed by the body between medial edges of the first and second portions and an anterior surface of the platform, the notch being sized to extend over a midline of the S1 vertebra when the body is attached to the S1 vertebra;

first and second hooks extending from the first and second portions respectively, the first and second hooks being spaced apart to engage with the S1 vertebra on opposite lateral sides of the midline of the S1 vertebra;

a brace with a planar proximal end and a distal end having a curved surface, the brace attached to an opposite side of the platform from the gap; and

a device that can selectively position the brace relative to the body in a plurality of positions to locate the curved surface of the distal end outward beyond the superior-most edge of the body to contact an inferior surface of a spinous process of the L5 vertebra.

44. (Previously Presented) The implant of claim 43 wherein:

at least part of the implant is comprised of a material selected from the group consisting of: polyetheretherketone, polyaryletheretherketone, and polyetherketoneketone.

45. (Previously Presented) The implant of claim 43 wherein:

at least part of the implant is comprised of a material selected from the group consisting of: polyetherketoneetherketoneketone, polyetheretherketoneketone, polyketone, and polyetherketone.

46. (Original) The implant of claim 43 wherein: at least part of the implant is comprised of titanium.

47. (Previously Presented) The implant of claim 43 wherein the device secures the brace to the body in a plurality of positions.

48. (Previously Presented) The implant of claim 43 wherein the distal end is bulbous.

49. (Previously Presented) The implant of claim 43 wherein where the distal end is one of elliptical, ovoid, oval, and round.

50. (Previously Presented) The implant of claim 43 wherein the distal end provides a surface which is at an angle to the proximal end, which surface is adapted to engage the L5 vertebra.

51. (Previously Presented) The implant of claim 43 wherein the distal end provides a surface that is adapted to spread a contact load between the L5 vertebra and the distal end.

52. (Previously Presented) The implant of claim 43 wherein the distal end is adapted to engage the spinous process of the L5 vertebra.

53. (Previously Presented) The implant of claim 43 wherein the distal end is adapted to engage the spinous process of the L5 vertebra over a conforming contact area.

54. (Previously Presented) The implant of claim 43 wherein the distal end includes a convex surface that is adapted to engage the spinous process of the L5 vertebra in order to spread the load between the distal end and the spinous process of the L5 vertebra.

55. (Previously Presented) The implant of claim 43 wherein the proximal end includes an elongated aperture and the device extends through the aperture and can be secured to the aperture in a plurality of positions in order to position the brace relative to the body in a plurality of positions.

56. (Original) The implant of claim 43 wherein the device extends from the platform.

57. (Canceled)

58. (Previously Presented) An implant adapted to be placed between vertebrae comprising;
a body having first and second portions with a platform located between the first and second portions;

a hook extending from an anterior side of the body and being adapted to engage a first vertebra;

a brace connected to a posterior side of the body and including an elongated shape with a major axis, the brace including a first end on the major axis positioned to contact an inferior surface a spinous process of a second vertebra when implanted; and

a device that can selectively position the brace relative to the body, wherein the first end extends beyond the body such that a mid-point of the first end contacts against the spinous process of the second vertebra.

59. (Original) The implant of claim 58 wherein:

at least part of the implant is comprised of a material selected from the group consisting of: polyetheretherketone, polyaryletheretherketone, and polyetherketoneketone.

60. (Original) The implant of claim 58 wherein:

at least part of the implant is comprised of a material selected from the group consisting of: polyetherketoneetherketoneketone, ployetheretherketoneketone, polyketone, and polyetherketone.

61. (Original) The implant of claim 58 wherein: at least part of the implant is comprised of titanium.

62. (Previously Presented) The implant of claim 58 wherein the device secures the brace to the body in a plurality of positions.

63. (Previously Presented) The implant of claim 58 wherein the first end is bulbous.

64. (Previously Presented) The implant of claim 58 wherein where the first end is one of elliptical, ovoid, oval, and round.

65. (Canceled)

66. (Previously Presented) The implant of claim 58 wherein the first end provides a surface that is adapted to spread a contact load between a L5 vertebra and the distal end.

67. (Previously Presented) The implant of claim 58 wherein the first end is adapted to engage a spinous process of a L5 vertebra.

68. (Previously Presented) The implant of claim 58 wherein the first end is adapted to engage a spinous process of a L5 vertebra over a conforming contact area.

69. (Previously Presented) The implant of claim 58 wherein the first end includes a convex surface that is adapted to engage a spinous process of a L5 vertebra in order to spread the load between the first end and the spinous process of a L5 vertebra.

70. (Withdrawn) A method for inserting an implant between an L5 and S1 vertebrae comprising the steps of:

- attaching a base of an implant on to the median sacral lamina of the S1 vertebra; and
- adjusting the position of a beam with a distal end relative to the base so that the distal end can contact a spinous process of an L5 vertebra and so that there is a desired spacing between the L5 and S1 vertebrae.

71. (Withdrawn) The method of claim 70 including the step of removing a bony protuberance from the S1 vertebrae prior to attaching the base to the S1 vertebra.

72. (Withdrawn) The method of claim 70 wherein the attaching step includes hooking the base over the S1 vertebra.

73. (Withdrawn) The method of claim 70 without altering the L5 or the S1 vertebrae.

74. (Withdrawn) A method for inserting an implant between the vertebrae comprising the steps of:

- attaching a base of an implant on to the lamina of the a first vertebra; and
- adjusting the position of a beam with a distal end relative to the base so that the distal end can contact a spinous process of a second vertebra and so that there is a desired spacing between the vertebrae.

75. (Withdrawn) The method of claim 74 including the step of removing a bony protuberance from the first vertebra prior to attaching the base to the first vertebra.

76. (Withdrawn) The method of claim 74 without altering the first or second vertebrae.

77. (Previously Presented) An implant adapted to be placed between vertebrae comprising:

- a body;
- at least one hook extending from the body and adapted to allow the body to engage a first vertebra;
- a brace extending from the body; the brace having a distal end with a curved surface with a first thickness and a beam with a second smaller thickness, wherein the curved surface is adapted to contact an inferior surface of a spinous process of a second vertebra; and
- a device that connects the beam to the body to secure the brace to the body and positions the curved surface outward from the body to contact the inferior surface of the spinous process of the second vertebra during extension of the vertebrae.

78. (Withdrawn) A method of implanting a device between S1 and L5 vertebrae in a spine, the method comprising:

- a. exposing an affected region of the spine posteriorly;
- b. inserting a base of the device between the S1 and L5 vertebrae so that a pair of flanges on the device engage an S1 vertebrae;
- c. selecting a spacer;
- d. installing the spacer on the base;
- e. adjusting a position of the spacer between the vertebrae;
- f. securing the spacer to the base; and
- g. closing the wound.

79. (Withdrawn) A method of adjusting an implant, the method comprising:

- a. accessing the implant with a cannula;
- b. loosening a nut on a shaft that holds a spacer onto a base of the implant; and
- c. sliding the spacer in one of an upper and lower direction to adjust a position of a bulbous end of the spacer between an S1 and L5 vertebrae.

80. (Withdrawn) A kit for implanting an interspinous implant comprising:

- a plurality of spacers having a bulbous end and a shaft extending therefrom;
- a base that is adapted to engage an S1 vertebrae; and
- a lock that secures one of the plurality of spacers onto a post extending from the base.

81. (Withdrawn) A kit for implanting an interspinous implant comprising:

- a plurality of spacers;
- a shaft to engage a spacer selected from the plurality of spacers;

a base that engages a medial sacral lamina; and
a lock that secures the shaft onto a post extending from the base.

82. (Previously Presented) The implant of claim 9 wherein the brace is mounted on a posterior side of the base when implanted, the distal end including a convex surface that is curved in an anterior-posterior direction and extends within a median plane of the implant.

83. (Previously Presented) The implant of claim 26 wherein the second contact surface includes a convex surface that extends within a median plane of the implant.

84. (Previously Presented) The implant of claim 26 wherein the brace is positioned on a posterior side of the body when implanted, the second contact surface including a convex surface that is curved in an anterior-posterior direction.

85. (Previously Presented) The implant of claim 43 wherein the distal end includes a convex surface that extends in a median plane of the implant.